

4. Biological studies (effect of smoke constituents on yeast cells and other tissue)

#### Optical Microscopy

1. Filter studies
2. Expanded leaf
3. Trouble-shooting in manufacturing, e.g. studies of mold in tobacco
4. Examination of competitors' products

#### TOBACCO TECHNOLOGY MICROANALYSIS

Staff of six

Personnel Training: Biophysics, microinstrumentation, experimental physics

Objective: Provide R & D with microstructure and microgeometry analytic services

#### Program:

1. Microgeometry of filters, tobacco, filter materials, biological specimens, paper, etc.
  - a. scanning electron microscopy
  - b. transmission electron microscopy
  - c. optical microscopy
  - d. develop techniques for preceding
2. Microstructure of filter surfaces and filter materials
  - a. microprobe analysis
  - b. photoelectron spectroscopy
  - c. x-ray analysis
  - d. develop new techniques for preceding

Facility Leader: Mr. I. Hasegawa, Senior Professional  
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General EM Consultants - \$500.00

#### Applications:

##### Scanning Electron Microscopy

1. Filtration and filter studies
2. Selective filtration
3. Expanded leaf
4. B. L. studies

##### Transmission Electron Microscopy

1. Filtration and filter studies
2. Selective filtration (particle size distribution studies)
3. Expanded leaf
4. Biological studies (effect of smoke constituents on yeast cells and other tissue)

##### Optical Microscopy

1. Filter studies
2. Expanded leaf
3. Trouble-shooting in manufacturing, e.g. studies of mold in tobacco
4. Examination of competitors' products

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Applications: (Con't)

Microprobe Analysis

1. Filtration studies (different composition as a function of particle size) (Analysis of deposition on filter and of filter surface)

X-Ray Analysis

1. Selective filters (structure of catalysts in filters and selective absorbents)
2. Expanded leaf studies, e.g. ammonium carbonate studies

ESCA

1. Filtration studies
  - a. Different composition as a function of particle size
  - b. Composition of deposition on filter surface, also question of whether chemisorption is occurring

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